

# Recent Status of Procedures in a Single Nationwide Cosmetic Surgery Group

Yusuke Funakoshi, MD, PhD  
 Masao Saito, MD, PhD  
 Ko Kawaguchi, MD  
 Eri Hiramatsu, MD  
 Nobuo Yamamoto, MD  
 Yoshiko Hondo, MD  
 Yumiko Nakagawa, MD, PhD  
 Koki Okumura, MD  
 Asami Sato, MD  
 Hiroo Teranishi, MD

**Background:** Recently, cosmetic surgery demand has increased due to the spread of promotional social media in Japan. However, understanding the overall landscape remains difficult due to many clinics with varied procedure options. To understand the current trends and status of cosmetic surgery in Japan, we analyzed large-scale data from a group of clinics throughout the country.

**Methods:** We analyzed data from 152,457 patients in our database. The periods from September 2018 to August 2021 and September 2021 to February 2023 were defined as the first and second periods, respectively, and the statuses of procedures were compared between the two.

**Results:** Eye procedures were the most common (23.6%), followed by face-lifts (19.5%) and dark circles under the eyes (10.4%). Between the first and second periods, the number of procedures in the second period (128,898 cases) was overwhelmingly higher than that in the first period (23,559 cases). Orbital fat removal for dark circles under the eyes significantly increased (OR 2.97, 95%CI 2.78–3.17); procedures in provincial cities significantly increased (Kinki/Chugoku/Shikoku: OR 2.21, 95%CI 2.08–2.36); and procedures for patients with occupations where appearance is considered important, such as nightlife businesses or being a celebrity, decreased (celebrity: OR 0.44, 95%CI 0.38–0.51, nightlife business: OR 0.58, 95%CI 0.53–0.62).

**Conclusions:** In Japan, cosmetic surgery has become increasingly common in recent years, and the trend has been changing over time. In the future, it will be important to organize and enhance our large-scale database to disseminate more accurate and useful information. (*Plast Reconstr Surg Glob Open* 2023; 11:e5330; doi: 10.1097/GOX.0000000000005330; Published online 11 October 2023.)

## INTRODUCTION

In recent years, the practice of celebrities and influencers publicizing their cosmetic procedures on social media has increased in Japan, leading to an increase in the demand for cosmetic surgery. At the same time, opportunities for ordinary people to undergo cosmetic surgery are increasing, adding to its popularity. The goals of cosmetic surgery include meeting individual patient needs and increasing their satisfaction, and procedures are not covered by insurance in Japan. Because there are many clinics and groups with varying procedures and surgeon skill levels, it is challenging to understand the situation in totality. In addition, the COVID-19 pandemic has further

complicated this task by causing changes in economic conditions and lifestyle.<sup>1–3</sup>

Currently, cosmetic surgery is performed and revised in Japan, based on the experience of doctors at each medical institution, and there are no clear criteria for the evaluation of surgical methods, resulting in challenges to building evidence. However, we aimed to accumulate evidence in this field toward the targeted development of more appropriate surgical techniques. Recently, cosmetic surgery research has been increasing worldwide,<sup>4</sup> and further accumulation of evidence for surgical procedures is expected. As our group is the fastest-growing and largest cosmetic surgery group in Japan, analysis of large-scale data from our group is expected to boost the understanding of the current trends and status of cosmetic surgery in Japan. As no reports on the current state of cosmetic surgery in Japan yet exist, it is important to summarize

From the Tokyo Central Beauty Clinic Umeda Osaka Ekimae Clinic, Osaka, Japan.

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the status of procedures in this field as a preliminary step. Hence, this study aimed to grasp the needs of patients and trends and organize the overall status of cosmetic surgery in our group.

## METHODS

### Data Acquisition

We obtained the data of 274,763 patients from our institutional database who visited clinics across Japan between September 2018 and February 2023. Cases in which patient age, gender, occupation, registered date, or procedure details were unknown were excluded. In total, 152,457 patients were included in this study (Fig. 1). To understand the status of procedure changes over time in our group, the periods from September 2018 to August 2021 and September 2021 to February 2023 were defined as the first and second periods, respectively, and the status of procedure was compared between the two periods.

### Procedures

Procedures for double eyelid with or without incision, blepharoptosis, epicanthoplasty, and lower eyebrow lift were classified as “eyes.” Apart from eyes, orbital fat removal, which targets dark circle removal under the eyes with or without incision, was divided into “dark circles under the eyes.” “Nose” included rhinoplasty, philtrum shortening, reduction of nasal alar, and nasal protuberance. Procedures related to the face other than the eyes and nose, including liposuction for the face line, were relatively few and classified as “other.” Plastic surgery for female genitals was classified as “gynecological plastic,” and breast augmentation, mastopexy, and plastic surgery for nipples were classified as “breast.” Acne vulgaris, freckles, high-intensity focused ultrasound, and removal

### Takeaways

**Question:** Recently, cosmetic surgery demand has increased due to promotion in Japan. However, understanding the overall situation regarding cosmetic surgery is difficult due to many clinics and groups with varied procedure options.

**Findings:** Cosmetic surgery has become increasingly common in recent years, and the trend has been changing over time. Compared with other countries, the proportion of surgical procedures for the face was higher in Japan.

**Meaning:** As no reports on the current state of cosmetic surgery in Japan yet exist, we summarized the status of procedures in our clinics, which are part of a large expanding cosmetic surgery group in Japan.

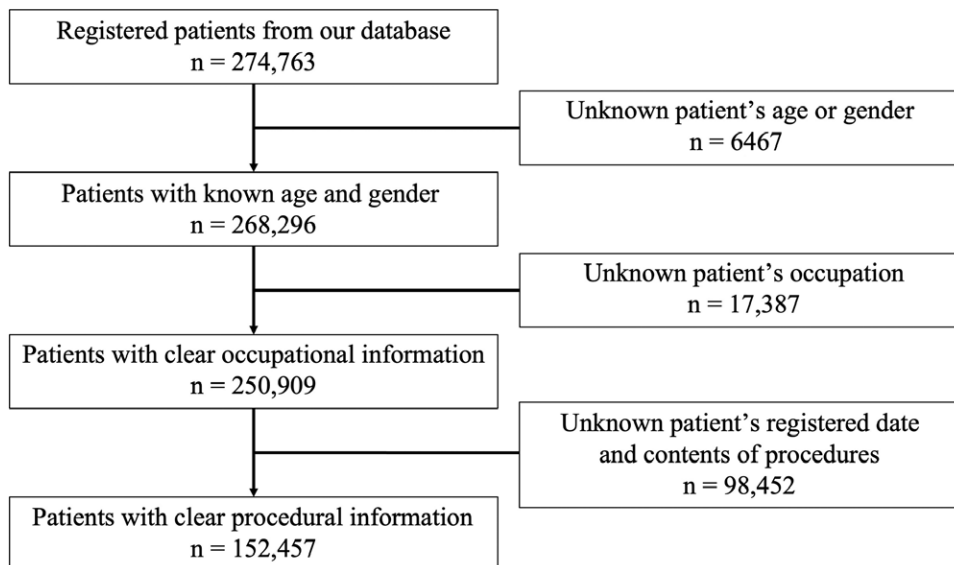
of tattoos were classified as “skin.” Surgical procedures such as abdominoplasty, liposuction for body, and other body contouring procedures were rare, and classified as other. Lastly, procedures for erectile dysfunction, androgenetic alopecia, cosmetic products, injections/infusions other than Botox and hyaluronic acid, internal and external medicines, piercings, and armpits/hyperhidrosis were also categorized as other.

### Occupations

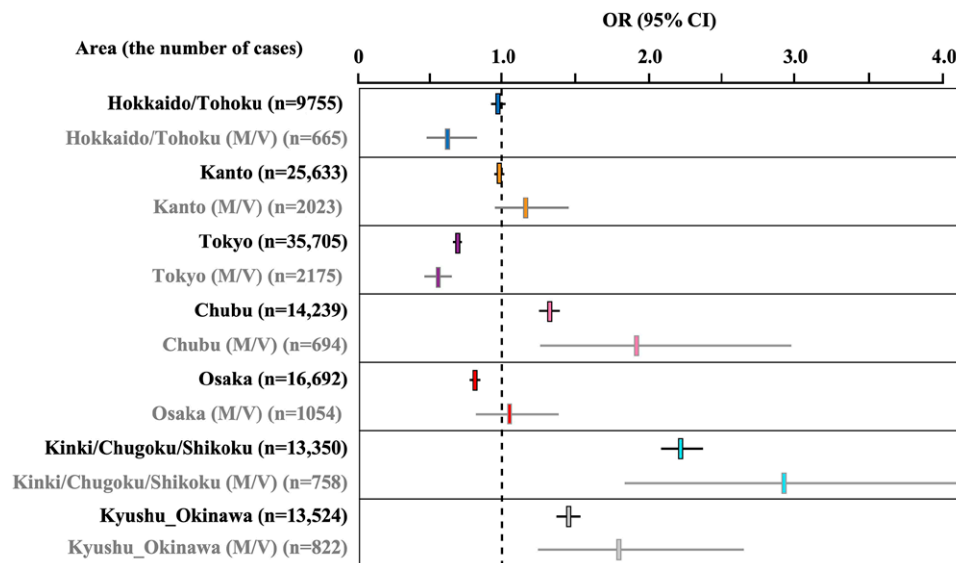
The occupations of the patients were determined using the results of a questionnaire survey at the time of the visit.

### Statistical Analyses

All statistical analyses were performed using R statistical software (version 3.5.0). The Mann–Whitney *U* test was used for age when we compared the first and second periods. To compare the types of procedure, regionality,



**Fig. 1.** Illustration showing the flow chart of the included patients in the present study.



**Fig. 2.** Illustration showing a comparison of the number of all procedures and removal of moles and verruca between the first and second period. Rectangles and lines indicate the ORs and 95% confidence intervals, respectively. The black line represents the results of all procedures, and the gray line indicates the results of only the moles and verruca. OR, odds ratio; CI, confidence interval; M/V, moles and verruca.

and occupation, *P* values were calculated using Pearson chi-square test. Statistical significance was set at a *P* value less than 0.05. The odds ratio for the age of patients who underwent each procedure was calculated using a generalized linear model (Poisson distribution).

**Ethical Statement**

The present investigation was approved by our local ethics committee (ethical review board of TCB), and written informed consent was waived because of the retrospective design. The study was conducted in accordance with the 1964 Declaration of Helsinki (as revised in Fortaleza, Brazil, October 2013).

**RESULTS**

Patient backgrounds and number of procedures for each type of procedure, area, and occupation between the first and second periods are summarized in Supplemental Digital Content 1. (See table, Supplemental Digital Content 1, which display the patients’ background and the number of procedures in each kind of procedure, area, and patients’ occupation between the first and second periods. <http://links.lww.com/PRSGO/C817>.) The median patient age was 30 (24–41) years, with a significant difference of 29 (24–40) years in the first period and 30 (24–42) years in the second period (*P* < 0.0001). Women constituted the majority (88.3%), and there was no significant difference in the gender ratio between the first and second periods (*P* = 0.4066).

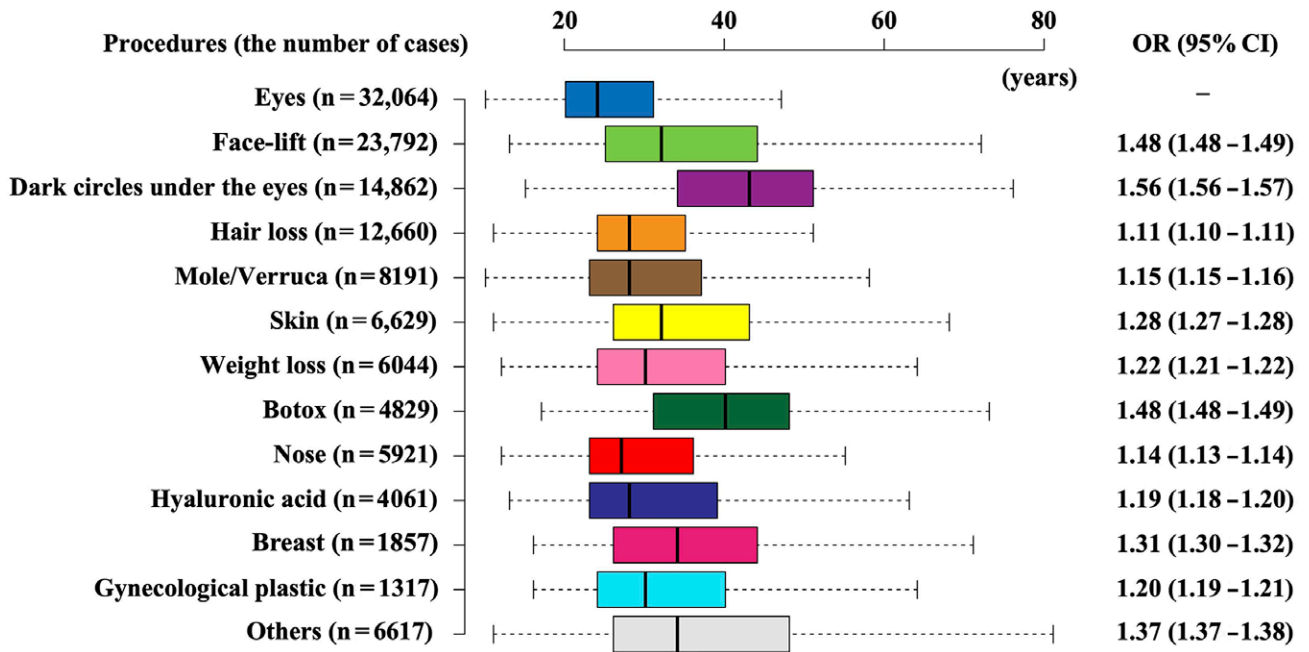
Among the procedures, eyes were the most common (23.6%), followed by face-lifts (19.5%), dark circles under the eyes (10.4%), and hair loss (10.3%). In a comparison of the number of the procedures between the first and second periods, those in the second period (128,898 cases)

were overwhelmingly higher than that in the first period (23,559 cases). Procedures around the eyes, including eyes and dark circles under the eyes, significantly increased (eyes: OR 1.70, 95%CI 1.63–1.76; dark circles under the eyes: OR 2.97, 95%CI 2.78–3.17), and procedures for moles and verruca also significantly increased (OR 2.78, 95% CI 2.54–3.02). However, the rate of face-lift and injection of Botox significantly decreased (face-lift: OR 0.67, 95% CI 0.65–0.69; Botox: OR 0.36, 95% CI 0.34–0.38).

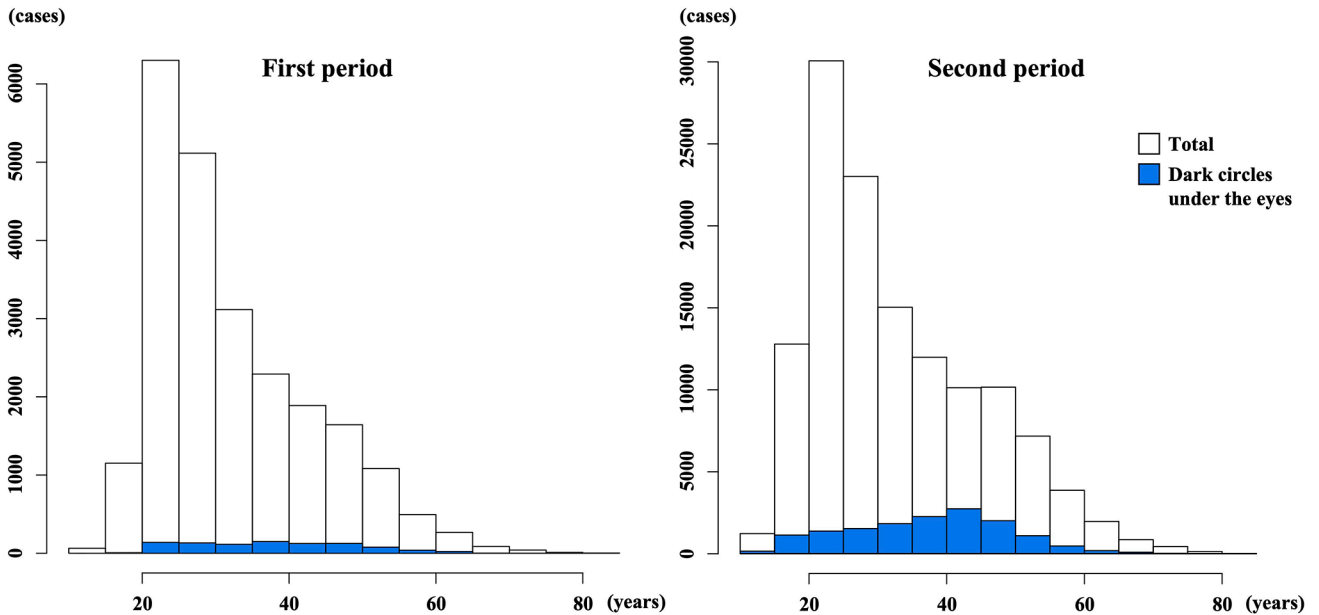
Tokyo had the most cases (28.9%), whereas the provincial cities had relatively fewer. However, in comparison to the number of procedures between the first and second periods, the rate of procedures in large cities such as Tokyo and Osaka significantly decreased (Tokyo: OR 0.69, 95%CI 0.67–0.71; Osaka: OR 0.80, 95% CI 0.77–0.84). In contrast, the number of cases significantly increased in provincial cities (Chubu: OR 1.33, 95%CI 1.27–1.40; Kinki/Chugoku/Shikoku: OR 2.21, 95%CI 2.08–2.36; Kyushu/Okinawa: OR 1.46, 95% CI 1.39–1.54). In particular, procedures for moles and verruca significantly increased in western Japan (Fig. 2).

Regarding occupation, while the rate of celebrity and nightlife business significantly decreased (celebrity: OR 0.44, 95%CI 0.38–0.51; nightlife business: OR 0.58, 95%CI 0.53–0.62), the rate of students undergoing procedures significantly increased (students: OR 1.21, 95%CI 1.17–1.27).

In the evaluation of age distribution for each procedure, the procedure for eyes was common among young people, with a median age of 24 (21–29) years. Dark circles under the eyes and Botox were common procedures among middle-aged individuals, with median ages of 42 (34–50) years, and 39 (31–47) years, respectively (Fig. 3). Although dark circles under the eyes accounted for only 4.2% (991 cases) of all procedures in the first period, the number of cases significantly increased to 11.5% (14,862



**Fig. 3.** Illustration showing age of patients in each field of procedures. Box plots depicts the median, interquartile range, and maximum and minimum age for each procedure. OR, odds ratio, CI, confidence interval.



**Fig. 4.** Illustration showing age distribution in the first and second periods. The white histogram shows the age distribution of all patients, and the blue histogram reveals the distribution of patients who underwent removal of the dark circles under the eyes.

cases) in the second period, and the age distribution changed (Fig. 4).

### DISCUSSION

Advances in cosmetic surgery, including technological improvements with the expansion of their capabilities and the safety profile optimization, have resulted in an increased

awareness of cosmetic surgery.<sup>5,6</sup> Additionally, in recent years, celebrities and influencers have increasingly publicized cosmetic surgery, leading to an expansion of the cosmetic surgery demand promoted by the spread of social media in Japan. The International Society of Aesthetic Plastic Surgery reported that 10.6 million surgical cosmetic procedures and 12.7 million nonsurgical cosmetic procedures were performed in 2018, and the increase in procedures compared

with 2014 was 15% and 25%, respectively.<sup>7</sup> Although the number of procedures had decreased due to restrictions for the COVID-19 pandemic since 2019,<sup>8,9</sup> research on cosmetic surgery has been increasing, and cosmetic surgery has gained popularity globally.<sup>4</sup> Our group opened the first clinic in 2014; has rapidly grown; and is currently one of the largest cosmetic surgery groups, with 96 clinics in Japan. The analysis of our data reflects the prevalence of cosmetic surgery in Japan and its status of procedures. Compared with other countries,<sup>10</sup> the proportion of surgical procedures for the face, including the eyes and nose, were apparently higher in our group. Moreover, the Japan Society of Aesthetic Plastic Surgery, a Japanese academic society, has reported that 87.7% of cosmetic surgery was related to the face in the Japanese multicenter study that did not include our group data.<sup>11</sup> Thus, the predominance of surgical procedures for the face could not be the surgeon's preference but be the Japanese current trend.

In this study, the status of procedures in our group was summarized, providing a clearer understanding of the current situation of cosmetic surgery in Japan. The most characteristic change among middle-aged patients was an increase in the number of dark circles under the eyes, which significantly changed the age distribution of patients in our study. Procedures for dark circles have become a popular topic on social media, leading to an increase in procedures as cosmetic surgery becomes more common. In addition, the number of eye procedures that young people undergo, mainly students, has increased because campaigns targeting students have been successful. The reason for the decrease in face-lifts may be attributed to an increased usage of masks as a countermeasure against COVID-19. While the number of procedures related to the face line that can be covered with a mask has decreased, the number of procedures for parts around the eyes such as the double eyelid and dark circles has increased. The decline in Botox and hyaluronic acid may have been influenced by the fact that the number of surgical procedures relatively increased as the group grew compared with injection procedures, which were more common when the clinic opened early. Regarding the differences in the number of procedures for moles and verruca in each area, delays in opening clinics in western Japan may have had a huge impact. Additionally, the increased number of new clinics and fewer competing institutions in provincial cities may have caused an increased rate of procedures for moles and verruca in provincial cities in western Japan. Although this study established that the rate of surgical procedures has decreased in occupations where appearance is considered important, such as nightlife businesses or being a celebrity, the number of procedures has increased among students, full-time housewives, civil servants, and the unemployed. Although the expansion of clinics in local cities may have affected the results, this suggests that cosmetic surgery has become more common among ordinary people. The decline in the number of self-employed, part-time, and service workers may be because these occupations are more susceptible to the economic downturn caused by COVID-19.

This study had several limitations. Although we summarized the achievements of our cosmetic surgery clinics that are spread all over Japan, this study was a retrospective analysis, and the results were greatly influenced by the management strategy and development status of the group, because the number of procedures may change depending on the number of clinics and doctors. A rigorous comparison was impossible because our group was rapidly growing, and the number of cases greatly differed between the first and second periods (first period: 23,559 versus second period: 128,898). Advertising methods and campaign content may also have changed over time, resulting in challenges concerning detailed evaluation. In addition, patient demographics have changed significantly owing to the nationwide expansion from large cities to provincial cities. Because many cases were excluded owing to inadequate databases in this study, it is possible that strict status could not be completely evaluated. Information such as occupation was obtained from a questionnaire survey at the time of the visit, leading to the possibility of inaccurate information.

As there were no existing reports summarizing the status of cosmetic surgery in Japan, our group published the results of an analysis using a large-scale database for the first time. However, the current information analysis is insufficient, and a detailed database should be created to accumulate evidence in the future.

## CONCLUSIONS

In this study, we summarized the status of procedures in our clinics, which are part of a large expanding cosmetic surgery group. Cosmetic surgery has become increasingly common in recent years, and the trend has been changing over time. In the future, it will be important to organize and enhance a large-scale database to disseminate more accurate and useful information.

*Yusuke Funakoshi, MD, PhD*

K's Square Building 3F, 2-8-15 Sonezaki  
Kita-ku, Osaka-city  
Osaka 530-0057, Japan  
E-mail: [sf1wan0610@gmail.com](mailto:sf1wan0610@gmail.com)

## DISCLOSURE

*The authors have no financial interest to declare in relation to the content of this article.*

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