

Executive Summary

Determine the status of cosmetic plastic Procedure and the development of information booklet for the users

Sun-Mi Jee¹, Sunhee Lee¹, Eunjung Park¹, Jijeong Park¹, Jayoung Kim¹

¹ National Evidence-based Healthcare Collaborating Agency

1. Background and purpose of the study

The total number of plastic surgery in Korea ranks 7th in the world and the number of surgery in every 10,000 persons ranks 1st. There is one plastic surgeon in every 3,800 persons in Korea in which it is reported as the nation with the largest number of plastic surgeons in the world (International Society of Aesthetic Plastic Surgeons, 2012). Meanwhile, in the survey to the citizens of Seoul on "enabling plastic surgery for appearances", response is on the increasing trend every year, prospecting the cosmetic surgery market to expand more. However, cases of adverse effect after cosmetic plastic surgeries are continuously reported by the media, and medical disputes related to plastic surgery are on an equal increase every year.

Regardless of these presentation of social problems, the cosmetic plastic surgery in Korea is performed outside of the health insurance system, therefore, the overall conditions, such as the type and number of cosmetic surgery, cannot be identified through the public institution data. Also, there had never been a public statistical survey and there are no data on the actual condition, complications, or adverse effect condition of cosmetic plastic surgery.

The purpose of this study is to identify the domestic condition on cosmetic plastic surgery and to develop the user database for frequent surgery. The detailed goals are as follows.

First is to identify the condition of cosmetic plastic surgery (surgery type, surgical amount, complications/adverse effect).

Second is to investigate the interests of the public on cosmetic plastic surgery.

Third is to develop the database on cosmetic plastic surgery with great interest

from the public that is to be used frequently.

2. Conditions of cosmetic surgery

Types of plastic surgery

The plastic surgery performed domestically were collected and classified, and the cosmetic surgery, plastic surgery classification system provided by the domestic- and foreign-related society and home pages were reviewed. The research form was composed based on these data to collect the information provided by 160 home pages of plastic surgery, dermatology, family medicine, and obstetrics and gynecology. The collected data were organized into a primary list through discussions with relevant experts. After gathering opinions from the societies, the final draft was prepared.

The types of cosmetic surgery were segmented into 15 body parts, 67 big categories, and 134 surgical names to be classified. When classifying according to the difference in surgical method and treatment material, 940 types of cosmetic surgery were collected.

Annual number of cosmetic surgery

The annual published report by the International Plastic Surgery Society was reviewed to estimate the annual number of cosmetic surgery in Korea. According to it, the number of surgery for each surgical procedure annually performed was researched for the society members. The regression model was used to estimate the number of surgery for each country.

Korea ranked 7th in the total number of cosmetic surgery in 2011, and the number for every 10,000 persons ranked 1st in the world. The type of cosmetic surgery most performed in Korea were liposculpture, breast augmentation, rhinoplasty, blepharoplasty, and abdominal plastic surgery. Liposculpture and breast augmentation showed to have increased compared to those done in 2010. For the cosmetic surgery, surgical procedure using Botox, using hyaluronic acid, laser epilation, autologous fat grafts, and IPL laser procedure topped the list in that order.

However, based on the result of the report published by the International Plastic Surgery Society, there was somewhat a difference to the result of the domestic expert's advisory. In Korea, because blepharoplasty or rhinoplasty are estimated to be performed far more than lipoplasty or breast augmentation in the

plastic surgery field, it was identified that there is a limit in reflecting the domestic surgery condition according to the results of the survey. However, except for the relatively high estimation of surgical procedure using Botox (Botulinum Toxin Type A) in the cosmetic surgery field, experts judged that the surgery rank distribution reflecting reality to some degree is shown.

Survey on the complications / adverse effect of cosmetic surgery

Institution data analysis

Material aid was received on the dispute mediation case by the Korea Medical Dispute Mediation and Arbitration Agency and on the report case of adverse effect on artificial breasts by the Ministry of Food and Drug Safety to identify the complications and the adverse effects of cosmetic plastic surgery. Also, relevant data were reviewed through the damage relief case report by the Korea Consumer Agency.

In a particular year of medical dispute mediation cases provided by the Korea Medical Dispute Mediation and Arbitration Agency, cases of accident/complications in cosmetic surgery were burn, infection, scar, and face deformation. Identifying the overall condition was difficult because of the small number of cases.

In the cases on adverse effect of artificial breasts from 2008 to 2012 provided by the Ministry of Food and Drug Safety, 2012 recorded about 2.6 times increase in the number of adverse effects compared to 2011. This increased further with the development of a report system and by designating a safety monitoring center. For the types of main adverse effects, product rupture was highest with 911 cases (55.4%), followed by 323 cases (19.7%) of product leak, and 297 cases (18.1%) of capsular contracture.

The data were identified through reported cases of damage relief recently published by the Korea Consumer Agency. In the accumulative condition for each surgical part from 2009 to November 2011, double eyelid surgery of 43 cases (19.5%) and rhinoplasty (nose surgery) of 39 cases (17.7%) were the highest; for the damage type, there were 9 cases (17.3%) of asymmetry, and scar, nerve damage, and insufficient effect were 4 cases (7.7%) each.

Systematic literature review on the complications for each surgery

In this study, to review the literature basis on complications of cosmetic surgery and individual surgery, systematic literature review was performed. Five scientific

journals related to cosmetic surgery were selected, together with all theses published within the last five years were the subject for review. The scientific journals included were the Journal of the Korean Society of Plastic and Reconstructive Surgeons or Archives of Plastic Surgery, the Journal of the Korean Society for Aesthetic Plastic Surgery or Archives of Aesthetic Plastic Surgery, the Korean Journal of Obesity, and the Korean Journal of Dermatology or Annals of Dermatology.

The selection standard is the literature reported about complications or adverse effects by adults over the age of 19 after who received cosmetic plastic surgery. The types of complications and adverse effects were not limited. Also, research plan of all literatures were included, and two researchers independently reviewed the title, abstract, and original text to select the final thesis for analysis.

In the 139 literatures finally selected, 125 noncomparative studies, 5 cross-section studies, 8 cohort studies, and 1 random clinical study were included. The selected literatures were classified according to body part and surgical type to collect the information on the surgery. The complications reported in the thesis showed diverse aspects depending on the surgery and the body part. Also, even in the same surgery, different complications were reported depending on the thesis.

Because the general definition on the complications were not established, the complications reported by the writer was not constant even through it was on the same surgery. Also, because most of the literatures selected were noncomparative studies, there were limits of providing by integrating the complication occurrence rate. The thesis published in the journal were mostly using newly attempted surgical methods or newly developed materials for medical treatment rather than the existing plastic surgery practice. Therefore, care must be taken in interpreting one general surgery as the type and occurrence rate of the complication.

○ Precedent analysis of cosmetic plastic surgery

For the domestic precedent analysis, case number related to cosmetic surgery of the last 5 years, from January 1, 2008 to July 31, 2013, were collected, and data extraction was performed in 264 cases possible for original precedent opening. For medical treatment subject, plastic surgery was the most with 120 cases, followed by general clinic, dermatology, and family medicine. The body part with the most precedent cases were in the order of

breasts, skin wrinkle, limbs, and somatotype. The surgical part occurred with death and brain damage were jaw facial bone contouring, limbs, and somatotype. Body parts occurred with disability were jaw facial bone contouring, cheek, and nose. The body parts with revision surgery were breasts, skin wrinkle, and nose. Also, for the contents of mistakes, not following the duty of care and explanation or negligence were the highest in frequency with 133 cases.

The sentencing reflects the contents described by the accused and the accuser on the incident rather than the medical contents, and the division of short- and long-term complication aspect was impossible, not being able to fully reflect the result of complication elapsing process, therefore the limitations in providing the results.

3. Public interest survey on the cosmetic surgery

Atypical big data were used to perform the survey on the types of cosmetic plastic surgery that the public is very much interested in and the concerned complications/adverse effects. In this survey, first, atypical big data were utilized to estimate the level of interest on the cosmetic surgery by the public. Second, issues related to the complications on cosmetic surgery were analyzed.

The data collection period was from January 2012 to July 2013, the media was limited to Twitter, and the collecting subjects were Tweet and Re-tweet related to cosmetic surgery. Tweet with PR and spam purposes were excluded in the filtering process. The social analysis was performed divided largely into cosmetic surgery interest trend analysis and issue analysis related to cosmetic surgery.

In 2013, the interest on cosmetic surgery increased approximately 3.5% compared to the same period a year earlier. Winter, fall, summer, and spring showed the highest in the order of seasons. The body part with the highest interest was "eyes", occupying 60.5% of all Tweet mentioning body parts, followed by nose (15.4%) and jaw (14.5%). For surgery, "blepharoplasty" (50.9%), "rhinoplasty" (13.9%), and "bimaxillary surgery" (10.9%) showed high interests.

Body parts showing the most adverse effect issue were the "eyes", "jaw", and "skin", but the body part with the most mentions on adverse effects compared to the body parts of interest were "breasts" and "inguinal region (hip)". For the interest on the adverse effect shown in each surgery, "blepharoplasty" showed the highest interest, but in terms of

adverse effect portion compared to the interest, “penile augmentation” and “abdominal plastic surgery” were high.

Body parts with the highest dissatisfaction in effect were in the order of “eyes”, “nose”, and “jaw”. The body part with high dissatisfaction in cost were similar for the “eyes”, “jaw”, “skin”, and “nose”. However, the body part with the highest dissatisfaction in effect contrast to interest were the “forehead” and “lips”, and the body part with high dissatisfaction in cost were the “legs (feet)”, “somatotype”, and “hair”, showing difference in the aspect of dissatisfaction for the each body part.

4. Development of the User's Information Booklet

To provide the method for the users of the cosmetic surgery to select the surgery based on the proper information, the necessity of developing a user database has come to the fore. On the user's information booklet developed in this study, when the consumer select a cosmetic surgery or a nonsurgical cosmetic procedure, the objective and professional medication information on the relevant procedure are provided to help possible patients.

Collaboration was done with professional societies (Korean Society of Plastic and Reconstructive Surgeons, Korean Society for Aesthetic Plastic Surgery, The Korean Association of Plastic Surgeons, Korean Cleft Palate-Craniofacial Association) to select 33 frequent domestic surgeries, as well as contents on the surgical purpose, surgical information, result, risk, and matters to be considered before surgery are included to be prepared in terms of easy understandability for the users. The development committee was composed of 15 plastic surgery specialists to prepare the draft of the information booklet and the review committee was composed of medical personnel, nonmedical personnel, and general public to be abridged in terms appropriateness for the public. The user's information booklet includes “cosmetic surgery and procedure checklist”, “case of cosmetic surgery (procedure) result not meeting your expectations”, and “information (33) for each plastic surgery (procedure)”.

5. Conclusion and proposal

The data to identify the overall conditions of the cosmetic plastic surgery did not exist to have limits in identifying the conditions for the 940 procedures. For the value added tax data on the cosmetic plastic surgery enforced from January

2014, if data access is possible to enable analysis for study purpose, it can be the alternative to identify the number of cosmetic surgeries in Korea and its overall conditions.

In this study, to identify the conditions of complications and adverse effects on the cosmetic surgery, analysis was attempted, but different from drugs, there were no unified standards on the complications and adverse effects for the each procedure with limits for secondary data interpretation. Therefore, to utilize these various data sources to derive the integrated study results, establishment of the consensus definition on the complications and the adverse effects must be preceded.

Key Words Cosmetic Plastic Procedure, Status, The User's Information booklet