

Ophthalmic Plastic, Reconstructive and Cosmetic Eyelid Surgeries in Taiwan

Research Article

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E-mail: wmhsu3939@gmail.com**Received:** May 12, 2015**Accepted:** June 22, 2015**Published:** July 02, 2015**Citation:** Hsu WM (2015) Ophthalmic Plastic, Reconstructive and Cosmetic Eyelid Surgeries in Taiwan. *Int J Ophthalmol Eye Res.* S4:001, 1-4. doi: <http://dx.doi.org/10.19070/2332-290X-S104001>**Copyright:** Hsu WM[©] 2015. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.**Background**

Taiwan, a medium-sized island located south-east of mainland China, has a land area of 36,000 square kilometers and a population of 23.4 millions. More than 11.7% of its total population is older than 65 years. In 2013, the average life expectancy in Taiwan was 79.16 years (male 76.72 years, female 83.20 years). For the past 60 years, Taiwan has benefited from the implementation of democracy, universal education, good law and order, improved economic conditions. Taiwan has become a free and open society with a large number of medical manpower to provide excellent medical care. Taiwan's government in 1995 began implementing the National Health Insurance for its citizens. In 2013, the total insurance expenditure of the National Health Insurance was 500 billions NT dollars (15.8 billion USD), accounting for 6.1% of the GDP [1].

In recent years, the demand for plastic and cosmetic surgeries has increased. Many of the plastic, reconstructive and cosmetic surgeries are focused on the region of eyes and face.

Development of ophthalmic plastic, cosmetic and reconstructive surgery in Taiwan

Ophthalmic Plastic and Reconstructive Surgery (OPRS) is a relatively new entity, but the art has been practiced in one form or another from time immemorial. Reparative procedures had been recorded in ancient China and India as well as in Celsus. Before

1970, most ophthalmic plastic surgeries were performed by general ophthalmologists in Taiwan. After 1970, and the ophthalmic plastic section became one of the 5 essential sections of ophthalmology department in most medical centers since 1980. Many hospitals appreciated this new section and sent many ophthalmologists abroad to learn ophthalmic plastic and reconstructive surgeries [2].

From 1986 to 2000, approximately 40 ophthalmic plastic surgeons underwent their subspecialty training program (i.e., ophthalmic plastic and orbital surgery) in the USA: (such as: Manhattan Eye Ear Throat Hospital, New York Eye and Ear Infirmary, University of California - Los Angeles, University of California - Davis, University of California - San Francisco, University of Southern California, Duke University, University of Utah, University of Iowa, Massachusetts Eye and Ear Infirmary, Wills Eye Hospital, Wilmer Eye Institute, Bascom Palmer Eye Institute); in Canada: (University of British Columbia); in England: (Moorfields Eye Hospital); and in Japan and Korea. Some 70 ophthalmic plastic surgeons underwent their subspecialty training in medical centers throughout Taiwan [2].

The Taiwan Society of Ophthalmic Plastic and Reconstructive Surgery (TSOPRS), founded in October 2013 (Figure.1) [2], provided academic activities, continuing educational courses (such as: symposium, workshop and live surgery demonstration) for residents and practicing ophthalmologists to learn ophthalmic plastic and reconstructive surgery. The society member has increased from the initial 67 in 2013 to a total of 112 in 2015 [2].

From 1985 to 2014, Taiwan ophthalmologists have published 312 academic papers (76 articles in Science Citation Index [SCI] journals and 236 in non-SCI journals) in the field of ophthalmic plastic and reconstructive surgery. Many of the publications bring meaningful and important topics into light [3-9].

Workforce involving ophthalmic plastic and reconstructive surgery in Taiwan

In 2014, there were a total 1,728 ophthalmologists in Taiwan serving a population of 23.4 million people [10]. Among the ophthalmologists, 112 are defined as oculo-plastic surgeons (6.5% of the total 1,728 ophthalmologists) [2, 10].

In Taiwan, specialists such as plastic surgeons, dermatologists, oral surgeons, otolaryngologists, family medicine doctors and even gynecologists perform many eyelid aesthetic procedures (especially filler injection). Plastic surgeons are the predominant

Figure 1. Inaugural meeting of the Taiwan Society of Ophthalmic Plastic and Reconstructive Surgery. (October. 10, 2013)

group among these physicians. Furthermore, approximately 25,000 paramedical persons, nurses and technicians assist in these plastic and cosmetic operations [2, 11].

Ophthalmic plastic, reconstructive surgeries and periocular aesthetic procedures in Taiwan

Entropion correction was the most common oculoplastic surgeries performed in Taiwan. Table 1 lists the approximate number of major ophthalmic plastic, orbital and reconstructive surgeries performed annually (2003-2013) by Taiwan ophthalmologists [2, 11, 12].

In 1979, intubation DCR (Dacryo-Cysto-Rhinostomy) technique was introduced to Taiwan [13]. Some modification techniques for improving success rate of external DCR were reported [14-16]. Endoscopic DCR have been promoted since 2009. Now (2013 to 2015), two thirds of DCR procedures were performed through endoscopic approach. Some Taiwanese oculo-plastic surgeons are interested in the field of TED (Thyroid Eye Diseases) and their researches were well documented [17-21].

Botulinum injection was introduced to Taiwan in 1999 [11]. Initially, it was applied to treat blepharospasm or eyelid retraction, now it was widely applied to some cosmetic procedures. Filler injection was introduced to Taiwan in 2005 [12]. Many instructional teaching courses were held to teach physicians how to perform botulinum and filler injection.

The exact number of aesthetic eyelid surgery cannot be easily documented. However, the estimated number of upper blepharoplasty procedures performed in Taiwan is approximately 60,000-80,000 procedures per year, and the number of lower blepharoplasty is approximately 40,000- 50,000 procedures per year. Plastic surgeons performed most aesthetic eyelid surgeries in more than

60% of the patients, whereas ophthalmologists perform less than 20% of these surgeries. Physicians from other specialties such as dermatologists, family medicine account for the remaining 20% [11, 12].

A survey performed in 2010 showed that "botulinum toxin injection" is the most common aesthetic procedure (32.7%), followed by hyaluronic acid injection (20.1%) performed in Taiwan.[22] In peri-ocular aesthetic procedures, there are approximately 400,000 botulinum toxin injections and 160,000 hyaluronic acid injections per year [22]. Among these injection procedures, plastic surgeons performed approximately 40% of these cases, whereas ophthalmologists performed approximately 30% of these procedures. Doctors from other fields account for the remaining 30% [10, 11].

Obstacles of ophthalmic plastic, reconstructive and cosmetic eyelid surgery in Taiwan

In addition to competition and conflicts between ophthalmologists and other specialists in cosmetic eyelid surgeries, the operation fee in ophthalmic plastic and reconstructive surgery is another obstacle [1]. The operation fee in cosmetic eyelid surgery is "out of pocket" by patient (for example, the fee of one site upper blepharoplasty is around \$9,000-20,000 NTD, or \$300-650USD, by individualized surgeon), but the operation fee of functional (non- cosmetic) oculoplastic surgeries were paid by government insurance (NHI of Taiwan) [1].

Table 2 lists the operation fee (under the control of the NHI of Taiwan) for some ocular surgeries [1]. As the data show, the operation fee for ophthalmic plastic, orbital and reconstructive surgery is relatively low, compared to the payment for intraocular procedures such as cataract surgery, penetrating keratoplasty, and trabeculectomy [1].

The payment for levator muscle resection is \$5,820 New Taiwan

Table 1. Some major oculoplastic and reconstructive operations performed annually (2003-2013) by Taiwan ophthalmologists [1, 2, 11, 12].

Operation	Approximate numbers per year
Entropion Correction	7,200
Ptosis correction operation	3,500
Excision of benign lid tumor	4,500
Excision of malignant lid tumor with reconstruction	90
Dacryo-Cysto-Rhinostomy (DCR)	250
Conjunctivo - DCR	40
Orbital tumor removal (or biopsy)	180
Orbital fracture repair (combined with plastic surgeons)	120

Table 2. Operation fee of eye operation in Taiwan (NHI standard fee, year 2013).

Eye operation	Operation Fee, NTD (USD) ^a
Cataract surgery (ECCE, Phaco)	9,000 (286)
Penetrating keratoplasty	12,390 (393)
Trabeculectomy (glaucoma)	6,939 (220)
Ptosis (levator resection/advancement)	5,820 (185)
Ptosis (frontalis sling)	5,449 (173)
Eyelid tumor (removal)	1,651 (48)
(with reconstruction)	6,989 (221)
Entropion (eyelid)	3,324 (106)
Ectropion	4,070 (129)
Dacryo-cysto-rhinostomy	7,760 (246)
Conjunctivo-DCR	8,240 (262)
Orbitotomy (tumor removal, lateral)	13,109 (416)
Orbital floor repair	8,163 (259)
Enucleation of eyeball	6,783 (214)
Evisceration of eyeball	5,946 (189)

DCR= dacryocystorhinostomy, NTD= new Taiwan dollars, USD= United States dollars

a : The information in this column is from *the National Health Insurance Statistics and Survey* (in Chinese) published by the Bureau of National Health Insurance, Ministry of Health and Welfare in Taipei, Taiwan. Copyright holder: National Health Insurance, Administration Ministry of Health and Welfare, 2013

Dollar (NTD), which is nearly two-third of the payment for cataract surgery (\$9,000 NTD) [1]. In the USA, operation fee for cataract surgery and levator muscle resection is nearly the same (\$700-800 USD) [23]. The surgical fee for ophthalmic surgeries in Taiwan is even lower than fees paid through Medicare for a similar procedure in the USA. For example, the operation fee for levator muscle resection was nearly one-fourth of the operation fee (\$190 USD, in Taiwan vs. \$750 USD in USA) [1, 23]. The relatively low payment for ophthalmic plastic surgeries in Taiwan should be considered an important issue that hinders ophthalmologists from performing ophthalmic plastic surgeries.

Future of ophthalmic plastic, reconstructive and cosmetic surgery in Taiwan

In order to overcome the above obstacles and enhance further development in the field of ophthalmic plastic and reconstructive surgery, the Taiwan Society of Ophthalmic Plastic and Reconstructive Surgery have held many symposia and seminars, in the recent 3 years, to provide opportunities for general ophthalmologists to learn more cosmetic surgeries and aesthetic procedures. There are also many combined meetings among ophthalmology, plastic surgery and dermatology to exchange their experiences. With the cooperation between ophthalmologists, plastic surgeons, dermatologists, the future of ophthalmic plastic, reconstructive and cosmetic surgery in Taiwan will be bright.

Conclusion

This article briefly describes the development and current status of ophthalmic plastic and reconstructive surgery in Taiwan. Up to 2015, there are 112 ophthalmic plastic surgeons in Taiwan. They have had their fellowship training abroad (most of them trained in the USA) or in Taiwan. All ophthalmic plastic surgeons were well trained and capable of performing major ophthalmic plastic

surgeries. The service level of oculoplastic and reconstructive surgeries become higher and higher in recent 30 years. The payment rates by Taiwan National Health Insurance for ophthalmic plastic and reconstructive surgeries are relatively low. Competition and conflict of interest among ophthalmologists, plastic surgeons, and other surgeons is an issue in Taiwan.

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