

World Journal of *Clinical Cases*

World J Clin Cases 2022 September 26; 10(27): 9550-9969



Contents

Thrice Monthly Volume 10 Number 27 September 26, 2022

OPINION REVIEW

- 9550** Psychiatric disorders and pain: The recurrence of a comorbidity
Vyshka G

REVIEW

- 9556** Cardiovascular disease and COVID-19, a deadly combination: A review about direct and indirect impact of a pandemic
Vidal-Perez R, Brandão M, Pazdernik M, Kresoja KP, Carpenito M, Maeda S, Casado-Arroyo R, Muscoli S, Pöss J, Fontes-Carvalho R, Vazquez-Rodriguez JM
- 9573** Molecular factors, diagnosis and management of gastrointestinal tract neuroendocrine tumors: An update
Pavlidis ET, Pavlidis TE

MINIREVIEWS

- 9588** Human-induced pluripotent stem cell-atrial-specific cardiomyocytes and atrial fibrillation
Leowattana W, Leowattana T, Leowattana P
- 9602** COVID-19 and the cardiovascular system-current knowledge and future perspectives
Chatzis DG, Magounaki K, Pantazopoulos I, Bhaskar SMM

ORIGINAL ARTICLE

Case Control Study

- 9611** PDCA nursing in improving quality management efficacy in endoscopic submucosal dissection
He YH, Wang F

Retrospective Study

- 9619** Impact of COVID-19 pandemic on the ocular surface
Marta A, Marques JH, Almeida D, José D, Sousa P, Barbosa I
- 9628** Anatomy and clinical application of suprascapular nerve to accessory nerve transfer
Wang JW, Zhang WB, Li F, Fang X, Yi ZQ, Xu XL, Peng X, Zhang WG
- 9641** Therapeutic effect of two methods on avulsion fracture of tibial insertion of anterior cruciate ligament
Niu HM, Wang QC, Sun RZ
- 9650** Efficacy of transcatheter arterial chemoembolization using pirarubicin-loaded microspheres combined with lobaplatin for primary liver cancer
Zhang C, Dai YH, Lian SF, Liu L, Zhao T, Wen JY

- 9657** Prognostic significance of sex determining region Y-box 2, E-cadherin, and vimentin in esophageal squamous cell carcinoma

Li C, Ma YQ

- 9670** Clinical characteristics and prognosis of orbital solitary fibrous tumor in patients from a Chinese tertiary eye hospital

Ren MY, Li J, Wu YX, Li RM, Zhang C, Liu LM, Wang JJ, Gao Y

Observational Study

- 9680** Altered heart rate variability and pulse-wave velocity after spinal cord injury

Tsou HK, Shih KC, Lin YC, Li YM, Chen HY

- 9693** Intra and extra pelvic multidisciplinary surgical approach of retroperitoneal sarcoma: Case series report

Song H, Ahn JH, Jung Y, Woo JY, Cha J, Chung YG, Lee KH

META-ANALYSIS

- 9703** Meta-analysis of gemcitabine plus nab-paclitaxel combined with targeted agents in the treatment of metastatic pancreatic cancer

Li ZH, Ma YJ, Jia ZH, Weng YY, Zhang P, Zhu SJ, Wang F

- 9714** Clinical efficacy analysis of mesenchymal stem cell therapy in patients with COVID-19: A systematic review

Cao JX, You J, Wu LH, Luo K, Wang ZX

CASE REPORT

- 9727** Treatment of gastric cancer with dermatomyositis as the initial symptom: Two case reports and review of literature

Sun XF, Gao XD, Shen KT

- 9734** Gallbladder hemorrhage—An uncommon surgical emergency: A case report

Valenti MR, Cavallaro A, Di Vita M, Zanghi A, Longo Trischitta G, Cappellani A

- 9743** Successful treatment of stage IIIB intrahepatic cholangiocarcinoma using neoadjuvant therapy with the PD-1 inhibitor camrelizumab: A case report

Zhu SG, Li HB, Dai TX, Li H, Wang GY

- 9750** Myocarditis as an extraintestinal manifestation of ulcerative colitis: A case report and review of the literature

Wang YY, Shi W, Wang J, Li Y, Tian Z, Jiao Y

- 9760** Endovascular treatment of traumatic renal artery pseudoaneurysm with a Stanford type A intramural haematoma: A case report

Kim Y, Lee JY, Lee JS, Ye JB, Kim SH, Sul YH, Yoon SY, Choi JH, Choi H

- 9768** Histiocytoid giant cellulitis-like Sweet syndrome at the site of sternal aspiration: A case report and review of literature

Zhao DW, Ni J, Sun XL

- 9776** Rare giant corneal keloid presenting 26 years after trauma: A case report
Li S, Lei J, Wang YH, Xu XL, Yang K, Jie Y
- 9783** Efficacy evaluation of True Lift®, a nonsurgical facial ligament retightening injection technique: Two case reports
Huang P, Li CW, Yan YQ
- 9790** Synchronous primary duodenal papillary adenocarcinoma and gallbladder carcinoma: A case report and review of literature
Chen J, Zhu MY, Huang YH, Zhou ZC, Shen YY, Zhou Q, Fei MJ, Kong FC
- 9798** Solitary fibrous tumor of the renal pelvis: A case report
Liu M, Zheng C, Wang J, Wang JX, He L
- 9805** Gastric metastasis presenting as submucosa tumors from renal cell carcinoma: A case report
Chen WG, Shan GD, Zhu HT, Chen LH, Xu GQ
- 9814** Laparoscopic correction of hydronephrosis caused by left paraduodenal hernia in a child with cryptorchism: A case report
Wang X, Wu Y, Guan Y
- 9821** Diagnosed corrected transposition of great arteries after cesarean section: A case report
Ichii N, Kakinuma T, Fujikawa A, Takeda M, Ohta T, Kagimoto M, Kaneko A, Izumi R, Kakinuma K, Saito K, Maeyama A, Yanagida K, Takeshima N, Ohwada M
- 9828** Misdiagnosis of an elevated lesion in the esophagus: A case report
Ma XB, Ma HY, Jia XF, Wen FF, Liu CX
- 9834** Diagnostic features and therapeutic strategies for malignant paraganglioma in a patient: A case report
Gan L, Shen XD, Ren Y, Cui HX, Zhuang ZX
- 9845** Infant with reverse-transcription polymerase chain reaction confirmed COVID-19 and normal chest computed tomography: A case report
Ji GH, Li B, Wu ZC, Wang W, Xiong H
- 9851** Pulmonary hypertension secondary to seronegative rheumatoid arthritis overlapping antisynthetase syndrome: A case report
Huang CY, Lu MJ, Tian JH, Liu DS, Wu CY
- 9859** Monitored anesthesia care for craniotomy in a patient with Eisenmenger syndrome: A case report
Ri HS, Jeon Y
- 9865** Emergency treatment and anesthesia management of internal carotid artery injury during neurosurgery: Four case reports
Wang J, Peng YM

- 9873** Resolution of herpes zoster-induced small bowel pseudo-obstruction by epidural nerve block: A case report
Lin YC, Cui XG, Wu LZ, Zhou DQ, Zhou Q
- 9879** Accidental venous port placement *via* the persistent left superior vena cava: Two case reports
Zhou RN, Ma XB, Wang L, Kang HF
- 9886** Application of digital positioning guide plates for the surgical extraction of multiple impacted supernumerary teeth: A case report and review of literature
Wang Z, Zhao SY, He WS, Yu F, Shi SJ, Xia XL, Luo XX, Xiao YH
- 9897** Iatrogenic aortic dissection during right transradial intervention in a patient with aberrant right subclavian artery: A case report
Ha K, Jang AY, Shin YH, Lee J, Seo J, Lee SI, Kang WC, Suh SY
- 9904** Pneumomediastinum and subcutaneous emphysema secondary to dental extraction: Two case reports
Ye LY, Wang LF, Gao JX
- 9911** Hemorrhagic shock due to submucosal esophageal hematoma along with mallory-weiss syndrome: A case report
Oba J, Usuda D, Tsuge S, Sakurai R, Kawai K, Matsubara S, Tanaka R, Suzuki M, Takano H, Shimoizawa S, Hotchi Y, Usami K, Tokunaga S, Osugi I, Katou R, Ito S, Mishima K, Kondo A, Mizuno K, Takami H, Komatsu T, Nomura T, Sugita M
- 9921** Concurrent severe hepatotoxicity and agranulocytosis induced by *Polygonum multiflorum*: A case report
Shao YL, Ma CM, Wu JM, Guo FC, Zhang SC
- 9929** Transient ischemic attack after mRNA-based COVID-19 vaccination during pregnancy: A case report
Chang CH, Kao SP, Ding DC
- 9936** Drug-induced lung injury caused by acetaminophen in a Japanese woman: A case report
Fujii M, Kenzaka T
- 9945** Familial mitochondrial encephalomyopathy, lactic acidosis, and stroke-like episode syndrome: Three case reports
Yang X, Fu LJ
- 9954** Renal pseudoaneurysm after rigid ureteroscopic lithotripsy: A case report
Li YH, Lin YS, Hsu CY, Ou YC, Tung MC

LETTER TO THE EDITOR

- 9961** Role of traditional Chinese medicine in the initiative practice for health
Li Y, Li SY, Zhong Y
- 9964** Impact of the COVID-19 pandemic on healthcare workers' families
Helou M, El Osta N, Husni R

- 9967 Transition beyond the acute phase of the COVID-19 pandemic: Need to address the long-term health impacts of COVID-19

Tsioutis C, Tofarides A, Spernovasilis N

ABOUT COVER

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The primary aim of *World Journal of Clinical Cases* (WJCC, *World J Clin Cases*) is to provide scholars and readers from various fields of clinical medicine with a platform to publish high-quality clinical research articles and communicate their research findings online.

WJCC mainly publishes articles reporting research results and findings obtained in the field of clinical medicine and covering a wide range of topics, including case control studies, retrospective cohort studies, retrospective studies, clinical trials studies, observational studies, prospective studies, randomized controlled trials, randomized clinical trials, systematic reviews, meta-analysis, and case reports.

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RESPONSIBLE EDITORS FOR THIS ISSUE

Production Editor: *Ying-Yi Yuan*; Production Department Director: *Xiang Li*; Editorial Office Director: *Jin-Lei Wang*.

NAME OF JOURNAL

World Journal of Clinical Cases

ISSN

ISSN 2307-8960 (online)

LAUNCH DATE

April 16, 2013

FREQUENCY

Thrice Monthly

EDITORS-IN-CHIEF

Bao-Gan Peng, Jerzy Tadeusz Chudek, George Kontogeorgos, Maurizio Serati, Ja Hyeon Ku

EDITORIAL BOARD MEMBERS

<https://www.wjgnet.com/2307-8960/editorialboard.htm>

PUBLICATION DATE

September 26, 2022

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INSTRUCTIONS TO AUTHORS

<https://www.wjgnet.com/bpg/gerinfo/204>

GUIDELINES FOR ETHICS DOCUMENTS

<https://www.wjgnet.com/bpg/GerInfo/287>

GUIDELINES FOR NON-NATIVE SPEAKERS OF ENGLISH

<https://www.wjgnet.com/bpg/gerinfo/240>

PUBLICATION ETHICS

<https://www.wjgnet.com/bpg/GerInfo/288>

PUBLICATION MISCONDUCT

<https://www.wjgnet.com/bpg/gerinfo/208>

ARTICLE PROCESSING CHARGE

<https://www.wjgnet.com/bpg/gerinfo/242>

STEPS FOR SUBMITTING MANUSCRIPTS

<https://www.wjgnet.com/bpg/GerInfo/239>

ONLINE SUBMISSION

<https://www.f6publishing.com>



Efficacy evaluation of True Lift[®], a nonsurgical facial ligament retightening injection technique: Two case reports

Peter Huang, Chih-Wei Li, Yong-Quan Yan

Specialty type: Dermatology

Provenance and peer review:

Unsolicited article; Externally peer reviewed.

Peer-review model: Single blind

Peer-review report's scientific quality classification

Grade A (Excellent): A

Grade B (Very good): B

Grade C (Good): C

Grade D (Fair): D

Grade E (Poor): E

P-Reviewer: Anzola F LK, Colombia; Liu L, China; Wang P, China; Zhang YN, China

Received: March 4, 2022

Peer-review started: March 4, 2022

First decision: May 30, 2022

Revised: June 16, 2022

Accepted: August 14, 2022

Article in press: August 14, 2022

Published online: September 26, 2022



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Abstract

BACKGROUND

With aging, four major facial retaining ligaments become elongated, leading to facial sagging and wrinkling. Even though synthetic fillers are popular, however, it cannot address the problems of soft tissue descent alone, and injection of these fillers requires knowledge of the injection technique including the selection of injection sites, the amount of filler, and the dosage used per injection site.

CASE SUMMARY

This report aimed to assess the safety and efficacy of a nonsurgical retightening technique to lift and tighten the true ligaments of the face, to improve age-related skin sagging and wrinkling. We objectively quantified the aesthetic lifting effect of a nonsurgical facial retightening procedure that strategically injected high G' fillers into the base of the true retaining ligaments of the face in two female patients. Facial images were recorded with a three-dimensional facial imaging system for comparison of the clinical outcome. The primary efficacy outcome was the change in facial anthropometric measurements obtained prior to and after injection. The patients were followed for 6 mo after the procedure. Skin retightening was observed, with an evident lift in the orbital, zygomatic, and mandibular regions, and the lifting effect was still observable at the 6-mo follow-up. Few mild adverse events, such as mild-to-moderate pain, tenderness, and itching, occurred during the 1st week after the procedure. No adverse events were reported 1 mo post-procedure.

CONCLUSION

The results of this study demonstrated that our nonsurgical retightening procedure with strategically placed high G' fillers achieved quantifiable aesthetic

improvements in the orbital, zygomatic, and mandibular regions of two patients. Future research with a larger sample could provide a more in-depth evaluation and validation of the aesthetic improvements observed in this study.

Key Words: 3D photogrammetry; Facial retightening; Facial retaining ligament; Cosmetic techniques; True Lift®; Restylane®; Lyft Lidocaine; Anesthetics; Case report

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Core Tip: We objectively quantified the aesthetic lifting effect using facial anthropometric measurements. Our results showed direct retightening of the true retaining ligaments by strategically planned high G' fillers to the base of the ligaments achieved immediate lifting effect.

Citation: Huang P, Li CW, Yan YQ. Efficacy evaluation of True Lift®, a nonsurgical facial ligament retightening injection technique: Two case reports. *World J Clin Cases* 2022; 10(27): 9783-9789

URL: <https://www.wjgnet.com/2307-8960/full/v10/i27/9783.htm>

DOI: <https://dx.doi.org/10.12998/wjcc.v10.i27.9783>

INTRODUCTION

Four major true facial retaining ligaments suspend the superficial muscular aponeurotic system (SMAS) of the face[1]. With aging, elongation of these true ligaments results in facial skin sagging and wrinkling. Recent advances in synthetic fillers, including non-animal stabilized hyaluronic acid, have gained popularity in noninvasive facial lifting and volume restoration procedures[2]. However, volume restoration using fillers alone does not address the problems of soft tissue descent. In addition, administering non-animal stabilized hyaluronic acid as a filler requires experience with this technique, and a satisfactory aesthetic outcome requires precise selection of the injection site as well as knowledge of the injection technique, the amount of filler, and the dosage used per injection site[3].

We have previously published an article describing a novel nonsurgical facial retightening procedure using the True Lift® technique with strategically planned 5-point injections of fillers at the base of facial true retaining ligaments. This resulted in direct tightening of ligaments and indirect lifting of the SMAS layer[4]. In this study, we objectively quantified the aesthetic lifting effect of this facial retightening technique 3 mo and 6 mo after the procedure, using a three-dimensional (3D) photogrammetric facial imaging system (Morpheus 3D® scanner, Morpheus Co., Ltd, Gyeonggi-do, Republic of South Korea)[5].

CASE PRESENTATION

Chief complaints

Two female participants visited our clinic for esthetic improvement of skin firmness.

History of present illness

No concurrent esthetic procedure was given during the study.

History of past illness

They both had prior histories of receiving facial dermatologic procedures for esthetic purposes.

Personal and family history

They were 28 years and 29 years of age at the time of the procedure and were healthy with no medical conditions. The esthetic procedures were performed in January 2018.

Imaging examinations

Three-dimensional facial images were taken with a commercial 3D scanner (Morpheus 3D Scanner®, Morpheus Co., Ltd., Gyeonggi-do, Republic of Korea)[5]. An LED white light was used as the light source in the imaging unit, and the entire scanning procedure took approximately 0.8 sec. The patients were seated with the head in a natural position and with the lips slightly closed. For each subject, 3 images were taken from 3 different horizontal angles (from the front, right, and left sides at a 45-degree angle). These images were then merged into a single 3D facial image.

TREATMENT

Procedure

Both subjects were treated in the same manner. Five injections were made to each side of the face. These injection points are illustrated in [Supplementary Figure 1](#). A total of 1 mL of high G' filler (Restylane® Lyft Lidocaine, Galderma Laboratories, L.P., Fort Worth, TX, United States) was used on each side of the individual's face, and the exact amount allocated to each injection site was standardized. High G' filler was injected with a sharp needle to ensure accurate placement to the base of 5 ligaments ([Supplementary Figure 1](#)). Fixed doses were administered to the following ligaments: (1) The orbital retaining ligament, 0.1 mL (point 1); (2) The zygomatic retaining ligament, 0.2 mL (points 2 and 3); (3) The buccal-maxillary retaining ligament, 0.4 mL (point 4); and (4) The mandibular retaining ligament, 0.1 mL (point 5). The detailed technique is described by Huang *et al*[4].

Briefly, the injection technique for the orbital retaining ligament (point 1) and the zygomatic retaining ligaments (points 2 and 3) involves elevating the skin and soft tissues at these points to expose the base of the ligaments. The filler is then injected perpendicularly to the periosteum using a sharp needle to ensure accurate placement at the base of the ligaments. Injection of the buccal-maxillary retaining ligament (point 4) does not require any additional elevation of the skin and soft tissues in this region. The filler is placed at the base of the buccal-maxillary retaining ligament with a needle at a 45-degree angle to the canine fossa. Injection of the mandibular retaining ligament (point 5) is similar to injection at point 4. The bolus injection is placed at the base of this ligament, just medial to the Marionette lines near the base of the mandibular border.

Three-dimensional photogrammetric analysis

Before and after comparison of the 3D facial images taken with the commercial 3D scanner were performed using superimposition evaluation. Measurements taken between each facial landmark were then made on 3D facial images using the Morpheus 3D "line-length" tool, which enables measurements of the direct distance between two points. Photogrammetric analysis was performed by a single trained operator.

Outcome definitions

The primary outcome was the change in facial anthropometric measurements, based on the images taken with the 3D facial imaging system. After a baseline measurement (T0), the measurements were made at 3 time points after the injections: immediately after the procedure (T1); at 3 mo (T2); and at 6 mo (T3). Then, the facial anthropometric measurements representing improvements in the orbital, zygomatic, and mandibular regions were determined. The secondary outcome was any self-reported post-injection adverse event (AE), which were recorded after each return visit (V) for 14 consecutive days: V1 at 14 d; V2 at 1 mo; V3 at 3 mo; and V4 at 6 mo post-treatment.

Retightening in the orbital region was defined by the angle formed between landmarks endocanthion, pupil, and exocanthion. Retightening in the zygomatic region (mid-face) was defined by the angle formed by tragion (Tg)-zygion-ala. Retightening in the mandibular region was defined by measuring the distance between soft tissue gonion (Go') and soft tissue menton. The reference for the mid-face was defined by the angle formed between landmarks otobasion superius-otobasion inferius-Tg. The reference for the lower face was defined by the distance between landmark Tg to soft tissue Go'. These landmarks are illustrated in [Figure 1](#).

OUTCOME AND FOLLOW-UP

Treatment outcomes

In both patients, the angle formed by exocanthion-pupil-endocanthion increased immediately after the procedure (T1) compared to the angle at baseline (T0). This represented retightening of the orbital retaining ligaments, and the increase in the angle was still evident at the final follow-up visit 6 mo post-injection ([Table 1](#)). The angle formed by Tg-zygion-ala decreased immediately after the procedure, and lasted until the final observation point in both cases, demonstrating the lifting effects in the zygomatic region ([Table 1](#)). The distance between Go' and soft tissue menton was substantially shortened, demonstrating retightening in the mandibular retaining ligaments, and these improvements lasted for at least 6 mo ([Table 1](#)). In contrast, the reference angle (otobasion superius-otobasion inferius-Tg) and distance (Tg-Go') used in the mid- and lower face, respectively, were unchanged by the treatment procedure. Representative photographs of changes in the patients' facial contours before and after the procedure are shown in [Figure 2](#). Post-injection AE, including mild-to-moderate bruising, pain, tenderness, and itching, were reported in both subjects during the 1st week after the procedure. No other AEs of any grades were noted 1 mo later or in any later follow-up visits ([Supplementary Table 2](#)).

Table 1 Morpheus 3D camera measurements demonstrating procedural effects on the orbital, zygomatic, and mandibular retaining ligaments

			T0 (baseline)	T1	T2	T3	Change in angle		
				(post tx)	(3 mo)	(6 mo)	T0 to T1	T0 to T2	T0 to T3
Orbital ligament									
Ex-P-En angle in degrees									
Right eye	Case 1	140.5	149.4	148.8	147.9	8.9	8.3	7.4	
	Case 2	140.0	145.3	144.7	146.7	5.3	4.7	6.7	
Left eye	Case 1	143.3	150.2	150.1	149.1	6.9	6.8	5.8	
	Case 2	143.3	147.4	146.0	148.0	4.1	2.7	4.7	
Zygomatic ligament									
Tg-Zy-Al angle in degrees									
Right cheek	Case 1	122.1	109.9	113.4	115.6	-12.2	-8.7	-6.5	
	Case 2	122.1	111.1	111.7	112.4	-11.0	-10.4	-9.7	
Left cheek	Case 1	116.3	110.1	111.8	112.5	-6.2	-4.5	-3.8	
	Case 2	128.9	120.6	121.1	123.6	-8.3	-7.8	-5.3	
Obs-Obi-Tg angle in degrees									
Right ear	Case 1	39.6	39.6	39.6	39.6	0	0	0	
	Case 2	45.6	45.6	45.6	45.6	0	0	0	
Left ear	Case 1	47.7	47.7	47.7	47.7	0	0	0	
	Case 2	47.7	47.7	47.7	47.7	0	0	0	
Mandibular retaining ligament									
Go'-Me' curved distance in mm									
Right cheek	Case 1	110.0	103.5	104.7	106.1	-6.5	-5.3	-3.9	
	Case 2	110.0	103.5	104.2	104.9	-6.5	-5.8	-5.1	
Left cheek	Case 1	108.3	101.2	103.2	104.8	-7.1	-5.1	-3.5	
	Case 2	105.9	99.8	100.8	101.7	-6.1	-5.1	-4.2	
Tg-Go' curved distance in mm									
Right ear	Case 1	49.8	49.8	49.8	49.8	0	0	0	
	Case 2	49.8	49.8	49.8	49.8	0	0	0	
Left ear	Case 1	50.8	50.8	50.8	50.8	0	0	0	
	Case 2	61.9	61.9	61.9	61.9	0	0	0	

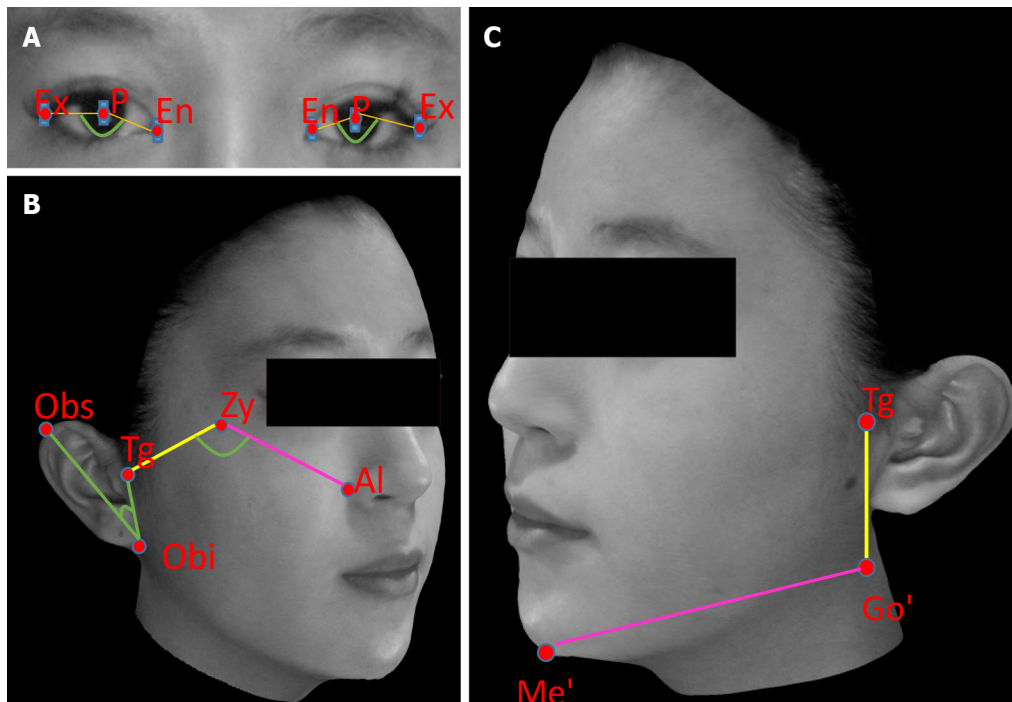
Al: Ala; En: Endocanthion; Ex: Exocanthion; Go': Soft tissue gonion; Me': Soft tissue menton; Obi: Otobasion inferius; Obs: Otobasion superius; P: Pupil; Post Tx: Immediately post treatment; T: Time; Tg: Tragion; Zy: Zygon.

DISCUSSION

Results from this study illustrated visible and lasting aesthetic improvements in the orbital, zygomatic, and mandibular regions, which are major focuses when addressing SMAS sagging from facial aging[6]. As in previous reports[7], there was no AE suggesting hypersensitivity in our patients, and no AEs were reported 1 wk post-injection.

Facial aging is a multifactorial process, involving displacement of fat compartments, elongation of the facial ligaments, attenuation of the SMAS layer, loss of bony support, and thinning of subcutaneous and dermal tissues[4]. In the early stage of facial aging, elongation of the facial ligaments results in descent of the overlying tissues and hence sagging of the skin.

Our novel nonsurgical facial retightening procedure is aimed at addressing the structural descent of the soft tissues due to facial ligament laxity. This is accomplished by injecting high G' filler at the base of the true retaining ligaments. Because this technique is based on retightening of the true retaining



DOI: 10.12998/wjcc.v10.i27.9783 Copyright ©The Author(s) 2022.

Figure 1 Illustrations of Morpheus three-dimensional camera measurements, showing facial landmarks used for Morpheus 3D Superimposition. A: Angle formed by exocanthion-pupil-endocanthion for improvement in the orbital region; B: Angle formed by tragion-zygion-ala for improvement in the zygomatic region (right), using the angle formed by otobasion superius-otobasion inferius-tragion as reference; C: Distance between soft tissue gonion and soft tissue menton for improvements in the mandibular region (left), using the distance between tragion and soft tissue gonion as reference. AI: Ala; En: Endocanthion; Ex: Exocanthion; Go': Soft tissue gonion; Me': Soft tissue menton; Obi: Otabasion inferius; Obs: Otabasion superius; P: Pupil; Tg: Tragion; Zy: Zygion.

ligaments, it is suitable for improving facial laxity during the early aging process but is not suitable for mature patients at the later stages of the facial aging process. Instead, later in the aging process rejuvenation requires more than facial retightening, such as facial volume restoration or correction of bony support.

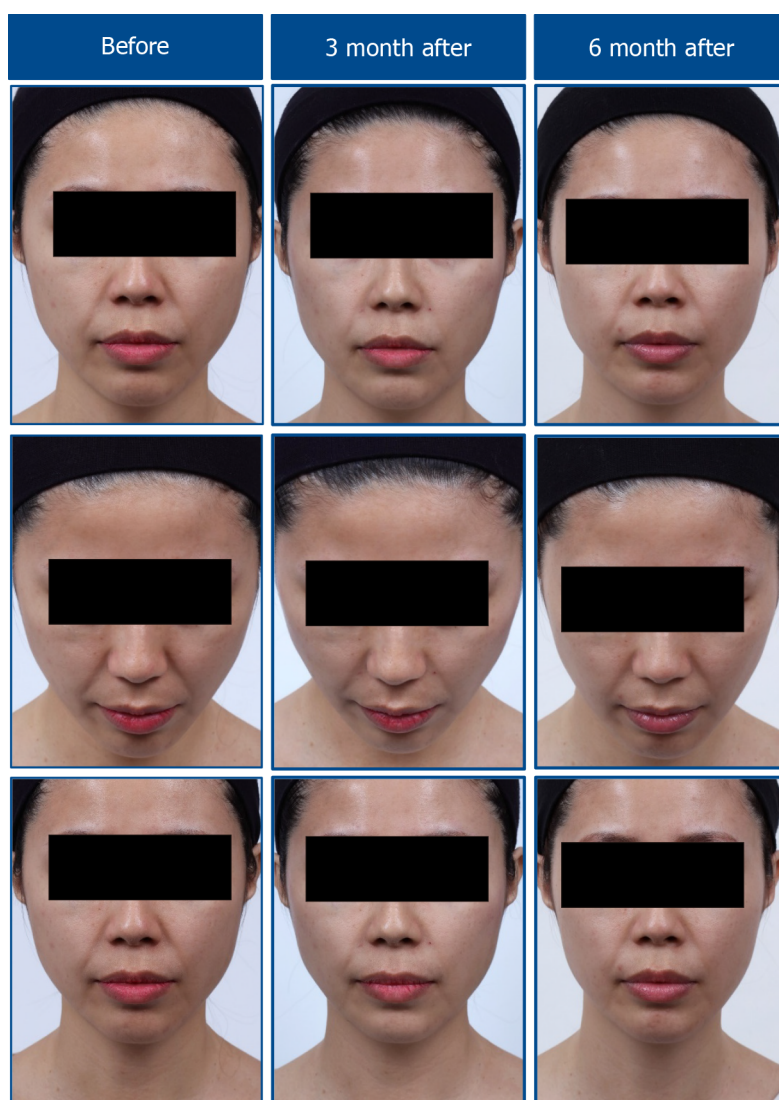
The success of this facial retightening procedure is dependent upon the precision of injections of high G' fillers into the base of the true retaining ligaments. Therefore, a high level of skill, experience, and an excellent knowledge of facial anatomy are required to achieve optimum placement of the filler.

Limitations

Limitations of this study included the small sample size and the age of the participants. The two patients in this study were relatively young and likely to be in very early stages of facial aging, which may partly explain the observed improvements. The aesthetic improvements observed in our study should be validated with a larger sample size. In addition, the effectiveness of the procedure for patients with different stages of facial aging should also be investigated in the future.

CONCLUSION

This report demonstrated that application of a nonsurgical retightening procedure with use of a high G' filler achieved quantifiable aesthetic improvements in the orbital, zygomatic, and mandibular regions in two female patients. Future research with a larger sample size could provide a more in-depth evaluation and could better substantiate the validity of the aesthetic improvements observed in this study.



DOI: 10.12998/wjcc.v10.i27.9783 Copyright ©The Author(s) 2022.

Figure 2 Representative photographs showing the effects of nonsurgical facial retightening procedure (True Lift®) with high G' filler (Restylane® Lyft Lidocaine) on overall changes of the facial firmness at 3-mo and 6-mo post-injection. Case patient: 29-years-old.

FOOTNOTES

Author contributions: Li CW and Yan YQ were involved in the acquisition, analysis, interpretation of the data, critical revision of the manuscript, and final approval of the version to be published, all authors contributed to the conception, study design, and the acquisition, analysis, and interpretation of the data; Huang P was involved in the design, acquisition of the data, and drafting and revision of the final manuscript, all authors gave final approval of the manuscript.

Informed consent statement: The ethical principles outlined in the Declaration of Helsinki and Good Clinical Practice were followed. Informed consent and permission to use their photographs for publication were obtained from each patient.

Conflict-of-interest statement: All authors declare that they have no competing interests.

CARE Checklist (2016) statement: The authors have read the CARE Checklist (2016), and the manuscript was prepared and revised according to the CARE Checklist (2016).

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S-Editor: Ma YJ

L-Editor: Filipodia

P-Editor: Ma YJ

REFERENCES

- 1 **Kang MS**, Kang HG, Nam YS, Kim IB. Detailed anatomy of the retaining ligaments of the mandible for facial rejuvenation. *J Craniomaxillofac Surg* 2016; **44**: 1126-1130 [PMID: 27427339 DOI: 10.1016/j.jcms.2016.06.018]
- 2 **Weiss RA**, Moradi A, Bank D, Few J, Joseph J, Dover J, Lin X, Nogueira A, Mashburn J. Effectiveness and Safety of Large Gel Particle Hyaluronic Acid With Lidocaine for Correction of Midface Volume Deficit or Contour Deficiency. *Dermatol Surg* 2016; **42**: 699-709 [PMID: 27176869 DOI: 10.1097/dss.0000000000000771]
- 3 **Wu W**, Carlisle I, Huang P, Ribé N, Russo R, Schaar C, Verpaele A, Strand A. Novel administration technique for large-particle stabilized hyaluronic acid-based gel of nonanimal origin in facial tissue augmentation. *Aesthetic Plast Surg* 2010; **34**: 88-95 [PMID: 19924470 DOI: 10.1007/s00266-009-9433-x]
- 4 **Huang P**. The True Lift Technique™: facial ligament retightening, an anatomical approach. *PMFA Journal* 2018; **5**
- 5 **Kim SH**, Jung WY, Seo YJ, Kim KA, Park KH, Park YG. Accuracy and precision of integumental linear dimensions in a three-dimensional facial imaging system. *Korean J Orthod* 2015; **45**: 105-112 [PMID: 26023538 DOI: 10.4041/kjod.2015.45.3.105]
- 6 **de Maio M**, Wu WTL, Goodman GJ, Monheit G; Alliance for the Future of Aesthetics Consensus Committee. Facial Assessment and Injection Guide for Botulinum Toxin and Injectable Hyaluronic Acid Fillers: Focus on the Lower Face. *Plast Reconstr Surg* 2017; **140**: 393e-404e [PMID: 28841604 DOI: 10.1097/PRS.0000000000003646]
- 7 **Hamilton RG**, Strobos J, Adkinson NF Jr. Immunogenicity studies of cosmetically administered nonanimal-stabilized hyaluronic acid particles. *Dermatol Surg* 2007; **33** Suppl 2: S176-S185 [PMID: 18086056 DOI: 10.1111/j.1524-4725.2007.33358.x]



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