Management of Facial Asymmetry with Combination of Orthognathic Surgery and Autologous Fat Transfer

Chun-Shin Chang1*, Christopher Glenn Wallace2, Yen-Chang Hsiao2, Yi-Jing Wang2, Philip Kuo-Ting Chen2 and Yu-Ray Chen2

1Department of Plastic and Reconstructive Surgery, Chang Gung Memorial Hospital, Taoyuan, Taiwan
2Craniofacial Research Center, Department of Medical Research, Department of Plastic Surgery and Department of Craniofacial Orthodontics, Chang Gung Memorial Hospital, Taoyuan, Taiwan

*Corresponding Author: Chun-Shin Chang, Chief, Department of Plastic and Reconstructive Surgery, Chang Gung Memorial Hospital, No.123, Dinghu Road, Guishan District, Taoyuan City 33378, Taiwan, Tel: +886 3 3281200; Fax: 886-3-3271029; E-mail: frankchang@cgmh.org.tw

Received date: April 09, 2017; Accepted date: April 11, 2017, Published date: April 13, 2017

Copyright: © 2017 Chang CS, et al. 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.

Keywords: Orthognathic surgery; Autologous fat injection; Facial asymmetry

Clinical Image

A pan-facial approach is usually best when aiming for a harmonious aesthetic facial outcome. Addressing both skeletal and soft tissue components of the face with simultaneous orthognathic surgery and autologous fat transfer, respectively, satisfies this concept.

Facial asymmetry is a challenge for craniofacial surgeons to correct. Our center currently uses three dimensional (3-D) surgical designs by combining cone-beam computed tomography scans and 3-D photographs (3dMD, Atlanta, Ga). Computer assisted surgical designs can help the surgeon achieve facial skeletal symmetry [1]. However, even if skeletal symmetrisation can be achieved, such patients almost invariably demonstrate some soft tissue discrepancy that persists after surgery. Autologous fat grafting is a minimally invasive procedure that is useful for correcting soft tissue deficiencies. Autologous fat transfer has many advantages: The graft volume that takes is long lasting. Large volumes of fat are graftable, including in successive grafting sessions. The surgical wounds are insignificant in size, being punctures, and can be strategically hidden. Minimal complication rates and minimal donor site morbidity. Fat grafts are entirely biocompatible. The volumisation effect of fat grafting can improve the overlying skin texture. Relatively short operation time. The materials used during the procedure are relatively inexpensive. Donor sites are readily available. Fat grafting can be combined with other surgical procedures such as face lift, orthognathic surgery and others [2].

Not all fat graft volume takes, and thus patients need to appreciate that repeat grafting procedures may be necessary to achieve the desired long term volumisation effect. To maximize autologous fat graft take, it isatraumatically harvested, prepared and then transferred to the recipient site as tiny tissue parcels, which have the best chance of developing a blood supply and survival [3]. We currently use the Microautologous Fat Transplantation Gun with an 18 gauge blunt needle to deliver consistent fat parcels as small as 1/60 ml [4].

By combining orthognathic surgery and autologous fat transfer principles for patients with facial asymmetry, the craniofacial and aesthetic surgeon can correct both skeletal and soft tissue discrepancies with a pan-facial approach to achieve improved postoperative facial symmetry (Figures 1-6) [5].
Figure 3: Simulated result of orthognathic surgery.

Figure 4: Pre-operative and one week post-operative cephalometrics.

Figure 5: Left, immediately after orthognathic surgery; an upper double-eyelid blepharoplasty has also been performed. Right, following autologous fat transfer to the chin, both mandibular borders, medial cheeks, tear troughs and nasal dorsum.

Figure 6: left upper, one week postoperatively; right upper, one month postoperatively; left lower, frontal view seven months postoperatively; right lower, lateral view seven months postoperatively.

Reference


